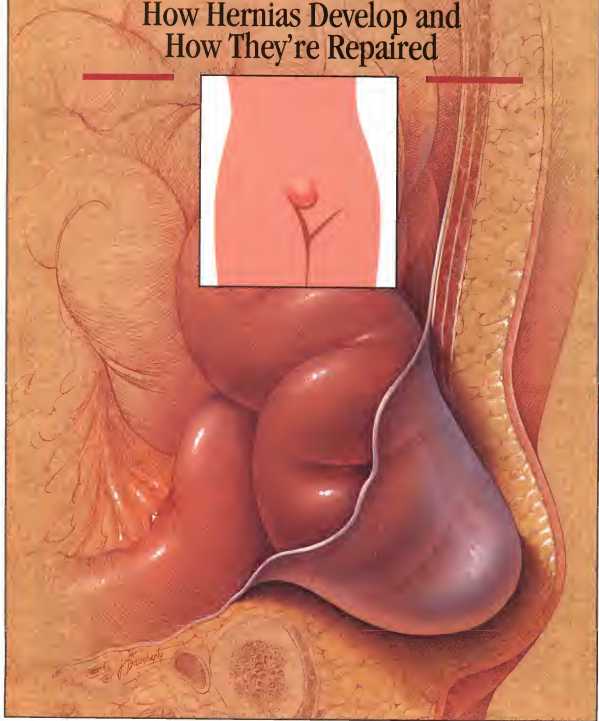


THE HERNIA SURGERY BOOK

How Hernias Develop and
How They're Repaired



When a Hernia Happens

2 Men, women, and children of all ages can have hernias. A hernia is a weakness or tear in the wall of the abdomen. It is sometimes called a "rupture."

How does a hernia happen? **Acquired hernias** are caused by wear and tear over the years. **Congenital hernias** result from a weakness in the abdominal wall that is present at birth. Hernias may get worse or grow larger with time or physical stress.



Noticing a Bulge

It's often easy to tell if you have a hernia. You may notice a bulge under your skin. You may also feel pain when you lift, cough, or strain during urination or bowel movements. The pain may be sharp or sudden—or both. In some cases, it may be a dull ache. The pain may get worse near the end of the day or after you stand for a long time.



Seeing Your Doctor

Do you think you have a hernia? If so, see your doctor right away for a medical evaluation. This is the first step to diagnosing your problem. You may just have a strained muscle. But if you do have a hernia, you and your doctor can then discuss surgery to repair it. This surgery helps prevent future complications and allows you to resume an active life.

Your Evaluation

Your doctor will evaluate you, using a medical history and physical exam. In some cases, an imaging test may be done. Then your doctor will decide how soon your hernia needs to be treated.

Surgery: The Best Treatment

Once a diagnosis is confirmed, your doctor may suggest surgery. It's usually better to have surgery before the hernia gets bigger and complications arise.

Back to an Active Life

Within a short period after surgery—usually no longer than 1 to 2 months—you'll most likely recover fully. Then you can return to your normal activities, free of the pain and worry your hernia caused you.

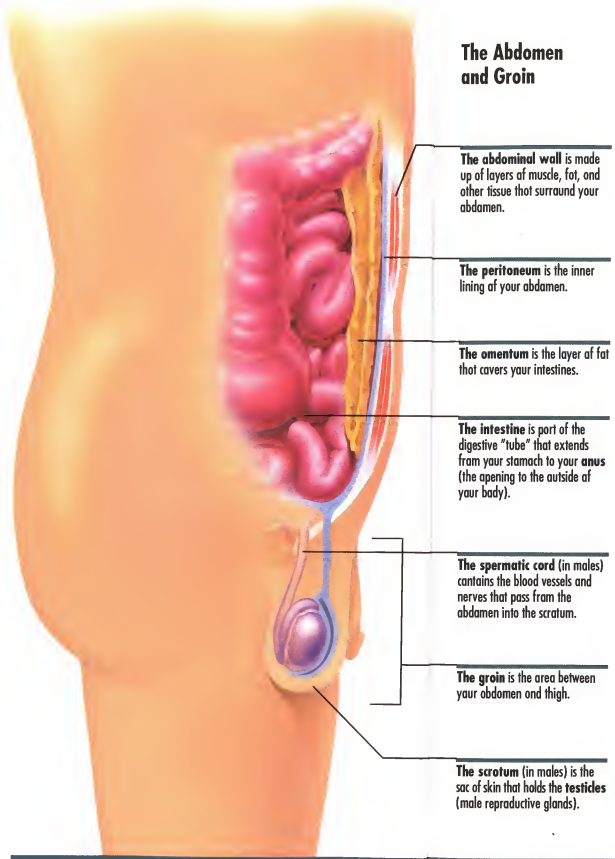


The Story Behind a Hernia

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Picture an old tire. Its outer wall is like the layers of tissue surrounding your abdomen (the **abdominal wall**). The tire's inner tube is like the thin inner lining of your abdomen (the **peritoneum**). Instead of holding air, your abdomen holds the intestines and other vital organs. Most often, the outer wall is strong enough to keep these organs in place. But if the wall gets weak, a hernia may form.



The Abdomen and Groin

The **abdominal wall** is made up of layers of muscle, fat, and other tissue that surround your abdomen.

The **peritoneum** is the inner lining of your abdomen.

The **omentum** is the layer of fat that covers your intestines.

The **intestine** is part of the digestive "tube" that extends from your stomach to your **anus** (the opening to the outside of your body).

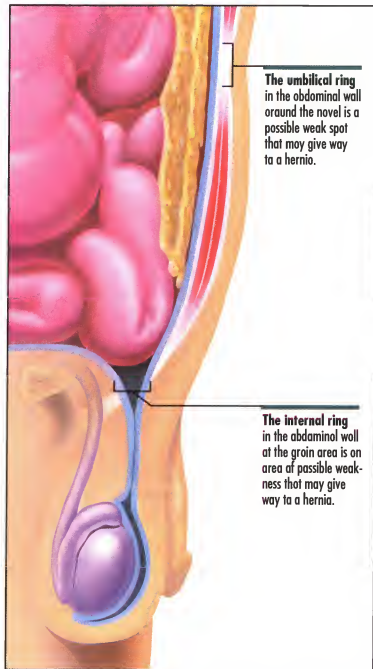
The **spermatic cord** (in males) contains the blood vessels and nerves that pass from the abdomen into the scrotum.

The **groin** is the area between your abdomen and thigh.

The **scrotum** (in males) is the sac of skin that holds the **testicles** (male reproductive glands).

Possible Weakness = Possible Hernia

The wall of your abdomen contains areas of possible weakness. These include natural spaces and thin tissue, such as the **umbilical ring** around the navel and the **internal ring** in the groin. Hernias may form at these or other places due to aging, injury, an old incision, or a weakness present at birth.



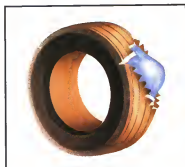
The **umbilical ring** in the abdominal wall around the navel is a possible weak spot that may give way to a hernia.

The **internal ring** in the abdominal wall at the groin area is an area of possible weakness that may give way to a hernia.

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How Hernias Form

The Problem Begins



Just as a bulge can form in a worn tire, a hernia may form in a weak abdominal wall. At the weak spot, a **hernia sac** (bulging abdominal lining) may fill with intestine or fat. This often causes some pain. Hernias can occur around your navel, groin, or a previous abdominal incision. Prompt surgery is often advised because hernias won't go away by themselves. If the intestine becomes trapped in the hernia, serious intestinal and digestive problems can occur.

The Wall Weakens or Tears

The abdominal wall may weaken or tear. A loop of intestine or fatty tissue may then push against the peritoneum. This forms a sac. You're not in immediate danger at this point. You may not even be able to see a bulge. But you may feel burning or tingling.

Peritoneum
Intestine
Abdominal wall
Skin



The Intestine Pushes into the Sac

As intestine pushes into the sac, a bulge may be seen externally. Sometimes the bulge flattens out when you lie down or push against it. This means you have a **reducible hernia**. Although you're not in immediate danger, you still need hernia repair.

Intestine pushing into sac



The Intestine May Become Trapped

If intestine becomes **incarcerated** (trapped), you won't be able to flatten the bulge. This is a **nonreducible hernia** and this is often painful. Prompt surgery is required.



The Intestine May Become Strangulated

If the intestine is **strangulated** (tightly trapped), it loses its blood supply and dies. A strangulated loop of intestine can also block digestion. It can cause severe pain. Emergency surgery is required to relieve the blockage and repair the hernia.



Where Hernias Might Occur

☐ An **incisional hernia** occurs at the site of a previous surgical incision, anywhere on the abdomen (see page 10).

☐ An **umbilical hernia** occurs in the umbilical ring around the navel (see page 12).

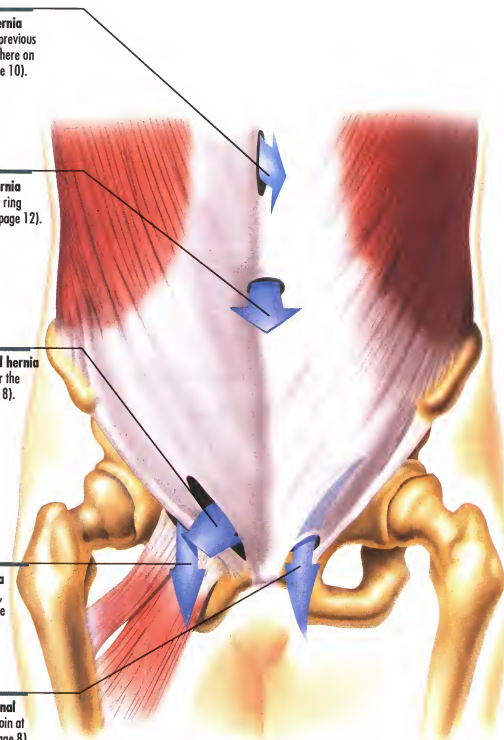
☐ A **direct inguinal hernia** occurs in the groin near the internal ring (see page 8).

☐ A **femoral hernia** occurs high in the thigh, just below the groin (see page 10).

☐ An **indirect inguinal hernia** occurs in the groin at the internal ring (see page 8).

☐ A **recurrent hernia** occurs at a previous hernia site.

☐ **Bilateral hernias** occur on both the left and right sides.

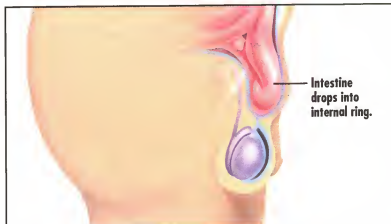




Indirect Inguinal Hernias

These are the most common hernias. They result from a weakness at the internal ring. They may be present at birth or may occur later in life.

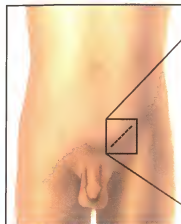
Why It Happens



A weakness may occur at the internal ring. As the hernia develops, the internal ring may enlarge and fill with intestine or part of the omentum. In men, the hernia sac can extend into the scrotum. In women, the hernia sac can extend to the **labia** (the outer folds of the genital area).

How It's Fixed

Incision



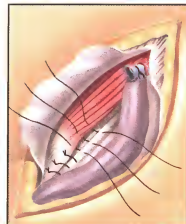
An incision is most often made on an angle just above the crease where the abdomen meets the thigh.

Repair



The hernia sac is lifted and opened, and the intestine or other tissue is placed back into the abdominal cavity. Then the excess sac may be tied off and removed.

Reinforcement



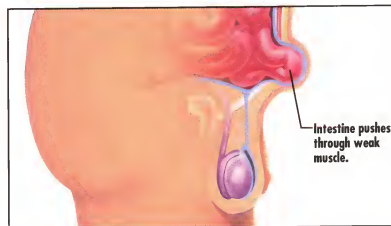
The opening at the internal ring may be tightened and the abdominal wall made stronger with sutures or with synthetic mesh. The skin incision may be **sutured** (sewed) or stapled.



Direct Inguinal Hernias

These hernias happen less often than indirect hernias. They are more common in men and most often occur after age 40. Direct inguinal hernias result from a weakness that develops in the groin near the internal ring.

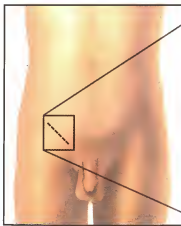
Why It Happens



Direct inguinal hernias may develop if muscle or other tissue near the internal ring weakens. This may result from aging or injury.

How It's Fixed

Incision



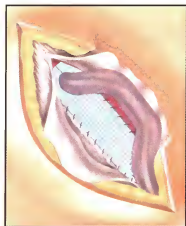
An incision is usually made on an angle just above the crease where the abdomen meets the thigh.

Repair



The sac containing intestine or other tissue is placed back into the abdominal cavity.

Reinforcement



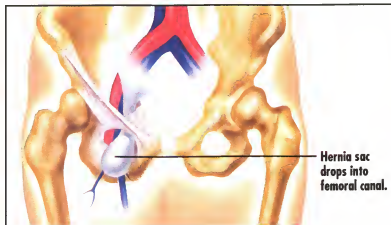
The weakened area of the abdominal wall is reinforced either with synthetic mesh or by suturing the abdominal tissue. The skin incision may be sutured or stapled.



Femoral Hernia

Femoral hernias are more common in women than in men. The result of a weakness below the groin, femoral hernias are often small but nonreducible. They can cause serious complications, such as strangulation of the intestine.

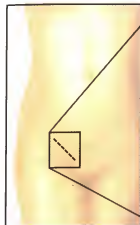
Why It Happens



A weakness in the lower groin area may allow a hernia sac to form. This sac, which contains a loop of intestine, drops into the **femoral canal**.

How It's Fixed

Incision



An incision is made above the crease where the abdomen and thigh meet. Then, either a **classic repair** or **mesh plug repair** is done.

Classic Repair



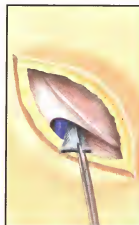
The hernia sac is lifted out of the femoral canal and opened. Intestine or other tissue is then placed back into the abdominal cavity. The excess sac may be tied off and removed.

Reinforcement



For a classic repair, the femoral canal is closed with sutures or made stronger with a sheet of synthetic mesh. The skin incision may be sutured or stapled.

Mesh Plug Repair



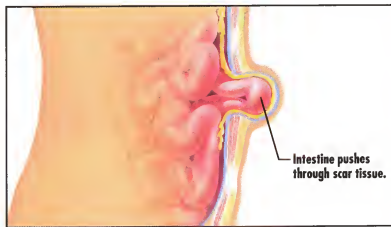
During mesh plug repair, the intestine or other tissue is pushed up the femoral canal into the abdominal cavity. A plug of synthetic mesh is used to fill the canal.



Incisional Hernia

These hernias bulge through scars from past surgical incisions. They may occur months to years after the first surgery. These hernias need prompt treatment because they may widen and become even harder to repair. They can cause serious complications, such as obstruction or strangulation of the intestine.

Why It Happens



Incisional hernias are often caused by weakened scar tissue or abdominal pressure due to obesity or frequent coughing. Incisional hernias can be found at or near any previous abdominal incision.

How It's Fixed

Incision



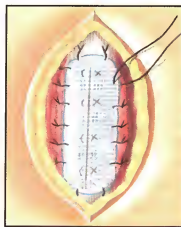
The incision from the earlier surgery is reopened at the site of the hernia.

Repair



The intestine or other tissue in the hernia sac is placed back into the abdominal cavity.

Reinforcement



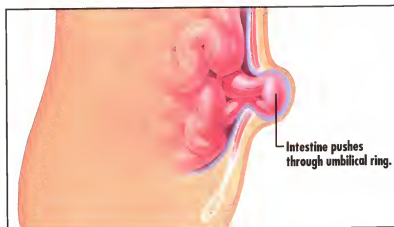
The opening is sutured or made stronger either with a sheet of synthetic mesh or by suturing the abdominal wall. The skin incision may be stapled or sutured.



Umbilical Hernia

An umbilical hernia looks like an inflated or bulging navel. It is caused by a defect that you may have at birth or acquire over time. Umbilical hernias can occur in children and adults of both sexes.

Why It Happens



Umbilical hernias result from a defect in the umbilical ring, which allows a hernia sac to form. Although they may be present at birth, umbilical hernias are sometimes caused by abdominal pressure due to obesity, excessive coughing, or pregnancy.

How It's Fixed

Incision



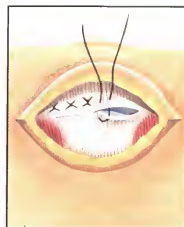
A semicircular incision is made above or below the navel.

Repair



The intestine or tissue in the hernia sac is placed back into the abdominal cavity.

Reinforcement



The umbilical weakness is tightened with sutures or made stronger with synthetic mesh. The skin incision may be closed with sutures or staples.

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13

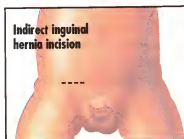
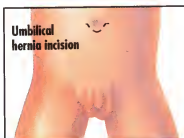


Hernias in Children

Children's hernias result from an abdominal wall defect present at birth. The most common hernias in children are umbilical and indirect inguinal. Both kinds of hernias should be examined by a doctor. Both umbilical and indirect inguinal hernias cause a bulge that can be seen and felt.

Your Child's Surgical Experience

Be sure that your child doesn't eat or drink anything (not even water) after midnight the evening before surgery, or as instructed. Routine blood and urine tests may need to be done. Your child may be given something to help him or her relax. During surgery, anesthesia will be used so that your child will feel no pain.



Umbilical Hernia Repair

A semicircular incision is made near the navel. The navel is raised and the hernia sac is cut away. The opening in the umbilical ring is closed. Then, the navel is returned to its normal position.

Indirect Inguinal Hernia Repair

An incision is made in the lower abdomen. After the hernia sac is removed, the opening at the internal ring may be surgically tightened. If an undescended testicle is present, it can be repaired, too.



Your Child's Recovery

Most children can go home the same day of surgery, after a short recovery time. Before you take your child home, your surgeon will schedule a follow-up appointment with you. Don't worry if you notice some swelling or bruising around your child's penis. This is normal.

When to Call the Doctor

Call the doctor if your child experiences any of the following problems:

- Fever
- Excessive swelling
- Redness
- Bleeding
- Increasing pain

Preparing for Surgery

Your doctor will take your medical history and do a physical exam. You may also have other tests. Then your surgery will be scheduled. Before surgery, you'll be asked to sign consent forms. Your doctor or anesthesiologist will talk with you about the anesthesia you'll be given during surgery.

Before and After Hernia Repair

If you are diagnosed with a hernia, you and your doctor may start planning for surgery. Hernia repair is often same-day surgery, so you may be able to go home within a few hours. At home, you can make your recovery as quick and comfortable as possible by easing slowly back into your daily activities.



Quit Smoking

Quit smoking to avoid straining your hernia from "smoker's cough" and to promote good blood flow for healing.

Avoid Heavy Lifting

Avoid putting strain on your hernia. Don't do any heavy lifting before your surgery.

Don't Eat or Drink

Don't eat or drink anything (not even water) after midnight the night before surgery. Your surgery may be canceled if you eat or drink before surgery.

Arrange for Help

Plan to have someone drive you home afterward. You'll want to take it easy after surgery, too, so you may need extra help at home.

Before Surgery

Schedule Lab Tests

You may have blood tests, an ECG (electrocardiogram), and a chest x-ray. These tests help ensure that your heart and lungs are healthy enough for surgery.

Ask About Medications

Before surgery, you may be told to stop taking some medications, such as aspirin, ibuprofen, or herbal remedies.

Risks and Possible Complications

- Bleeding
- Infection
- Numbness or pain in the groin or leg
- Urinary retention (inability to urinate)
- Bowel or bladder injury
- Recurrent hernias
- Deterioration of testes
- Risks of anesthesia

Your Recovery

After surgery, you may be given medication to relieve discomfort. You'll have small bandages over your incision. You may also have an IV (intravenous) tube in your arm to give you fluids for the first few hours after surgery. In most cases, you'll be able to go home as soon as you're able to eat, drink, urinate, and walk. Ask your doctor about how to limit your activity while you heal.

Back at Home

After surgery, you may notice swelling, discoloring, or soreness near your incision. You may feel bloated, constipated, or more tired than usual. These effects go away with time. To ensure a smooth recovery, follow these guidelines:

Bathing

Ask your doctor how soon you can shower, bathe, or wash the area around your surgical site.

Lifting

During the week after surgery, lift only light objects that are easy to manage. Keep your back straight. Allow your legs to do most of the lifting.

Sex

Ask your doctor how soon after surgery you may have sex, since it may put a strain on your incision.

Medications

Your incision site may be tender at first. Your doctor may give you pain medication to use at home.



Driving

Driving may strain your incision. Ask your doctor when you can drive. Don't drive while using pain medication.

Exercise

Light exercise can improve circulation. So, walk as much as is comfortable. It's also okay to climb stairs. Just take them slowly, one at a time.

Diet

At home, start eating a healthy, high-fiber diet and drinking lots of fluids. Ask your doctor about using a laxative or stool softener if needed.

Work

Your doctor will let you know when it's okay to work again. If you have a desk job, you may be able to go back to work within a couple of weeks. If you perform more physical work, you may have to wait longer.

Follow-up Visits

Your doctor may schedule you for a follow-up visit in about a week. During the visit, your doctor will check how well you're healing. Your stitches or staples may be removed or bandages replaced. More visits may be scheduled.

When to Call Your Doctor

Call your doctor if you have any of these problems:

- Fever
- Excessive swelling or bruising (some testicular swelling or bruising is common)
- Urinary retention
- Redness
- Bleeding
- Increasing abdominal or testicular pain
- Nausea or vomiting

The Treatment of Choice

Don't let a hernia limit what you do. Surgery now can help prevent other problems later on. So, seek treatment promptly. Soon after surgery, you'll be able to get back to work, and to the things you enjoy.



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This product also available in Spanish